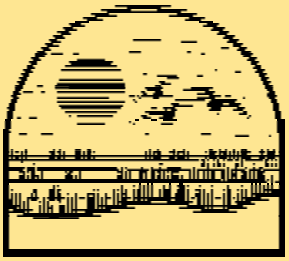
North Carolina National Estuarine Research Reserve
Technical Paper Series:

Septic Systems in Coastal North Carolina: Basics for a Healthy Environment

No. 4



Why should you be concerned about septic systems?

When septic systems are designed, constructed, and maintained properly, they are an effective method of treating and disposing of household wastewater in coastal North Carolina. In contrast, poorly planned and maintained systems can fail and contribute to nonpoint source pollution and public health concerns.

In coastal North Carolina, failures may result in nutrient loading of our coastal and estuarine waters, shellfish closures due to fecal coliform inputs, groundwater contamination, and health problems. Even properly functioning systems may release potentially harmful levels of nitrogen and synthetic chemicals into the soil and groundwater if septic systems are misused. It is critical for local governments and citizens to consider the consequences of malfunctioning and misused septic systems and take action to prevent negative impacts.

According to 1990 census data, approximately 60% of homes in the 20 Coastal Area Management Act (CAMA) counties in North Carolina rely upon septic systems for wastewater disposal (see Table 1). This is compared to an average of about 50% statewide, indicating that the communities with the most direct link to our estuarine waters have the greatest potential to negatively impact the environment.

Reliable data regarding the number of failing systems in these counties is not available. However, it is likely that in addition to homeowners who are aware of problems with their systems and undertake repairs, there are others who do not know how to recognize and repair failures. Some impacts of improperly functioning systems are not visible and may occur without homeowners' knowledge. It is essential that people are educated about the appropriate use and maintenance of septic systems.

When septic systems fail, untreated wastewater can seep up and puddle on the land surface rather than percolate down through the soil for treatment. This untreated effluent may contain disease-causing organisms and nutrients that contribute to nonpoint source pollution.

Rains can flush the polluted standing water from lawn surfaces to nearby waters. Along much of North Carolina's coast, estuaries are the receiving waters, where shellfish populations can be adversely affected by *(continued on page 4)*

Table 1. Wastewater disposal in the 20 CAMA Coastal Counties

		Wastewater Disposal (Housing Units)			Sewer Usage	Septic Usage
County	**Population**	**Sewer**	**Septic**	**Other**	**(%)**	**(%)**
Beaufort	47,173	5,620	15,479	789	25.68	70.72
Bertie	28,700	2,682	8,143	727	23.22	70.49
Brunswick	55,240	6,277	32,929	531	15.80	82.87
Camden	5,904	26	2,296	144	1.05	93.11
Carteret	60,501	11,614	26,141	443	30.40	68.44
Chowan	17,435	2,869	4,592	146	37.72	60.37
Craven	83,808	18,175	14,586	458	54.71	43.91
Currituck	13,736	1,037	6,196	134	14.08	84.10
Dare	26,740	4,173	20,637	50	16.79	83.01
Gates	12,159	94	4,226	492	1.95	87.82
Hertford	22,523	3,639	4,799	432	41.03	54.10
Hyde	12,787	1,144	3,650	352	22.23	70.93
New Hanover	120,284	40,657	16,075	344	71.23	28.16
Onslow	159,202	28,182	24,071	517	53.41	45.61
Pamlico	14,099	702	6,200	200	9.88	87.30
Pasquotank	31,298	6,574	5,540	184	53.46	45.05
Pender	28,855	2,802	12,200	435	18.15	79.03
Perquimans	10,447	1,109	3,691	172	22.30	74.24
Tyrrell	3,856	467	4,391	173	9.28	87.28
Washington	18,050	2,750	2,213	187	53.40	42.97
Total	**772,797**	**140,593**	**218,055**	**6,910**	**38.46**	**59.65**